

**REMARKS****Status of the claims:**

With the above amendments, claims 1, 3, 6, 9, and 10 have been amended, claims 1-13 are pending with claims 6-9 and 11 having been withdrawn from a prior restriction requirement. No new matter has been incorporated. Claims 1, 6, and 9 have been amended to correct typographical errors. Claim 3 has been amended to convert the claim to a composition claim. Claim 10 has been amended by the incorporation of the composition of Claims 6 and 9 into Claim 10.

**Election/ Restriction**

The Examiner has finalized the restriction from the first action saying that a burden does exist to search the claims and that *In re Ochiai*, 37 USPQ2d 1127 (Fed. Cir. 1995) does not apply. Applicants still traverse.

Regarding an undue burden, Applicants submit that if the composition is new and unobvious, the method of using that composition must necessarily be new and unobvious. Thus, the Examiner does not even have to search the method classes if the composition is found to be new and unobvious. Accordingly, there is no undue burden.

Regarding *Ochiai*, the Examiner states:

*Additionally, it is noted that the claims cannot be rejoined under In re Ochiai, since this case law applies to a product and methods making said product, not a product and methods of using said product.*

Applicants must respectfully disagree. Applicants submit that *Ochiai* applies to both methods of use and methods of making. The Examiner's attention is drawn to footnote 6 in *Ochiai* wherein the Federal Circuit citing *In re Papesch*, 137 USPQ 43, 53 (1963) said

*. . . As stated above, the compounds and their use are but different aspects of, or ways of looking at, the same invention and consequently that invention is capable of being claimed both as new compounds or as a new method of process of bonding/priming.*

Further, in the M.P.E.P. § 2116.01 (Eighth Edition) it states

*The decision in Ochiai specifically dispelled any distinction between processes of making a product and methods of using a product with regard to the effect of any product limitation in either type of claim.*

Thus, *Ochiai* does not treat methods of making any different from methods of use. Thus, as is consistent with *Ochiai*, Applicants respectfully request rejoinder of the method of use claims upon the finding of allowable subject matter of the composition claims.

**Specification Objections**

The Examiner asserts that the method AARCC-138 on page 16, line 1 is unknown. Accordingly, Applicants have corrected this to recite AATCC-138.

Further, the Examiner has objected to the formula on page 14, line 9. The formula has been amended to recite, "Stainproof ratio (%) =  $100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N$ ". With these amendments, it is believed that these objections have been obviated. Withdrawal of the objections is respectfully requested.

**Claim Objections**

Claim 10 is objected to because it is dependent upon claim 9 and ultimately dependent upon claim 6, and claims 6 and 9 have misspellings in them. The spellings have been corrected. Withdrawal of the rejection is respectfully requested.

**Rejections under 35 USC §112, second paragraph**

Claims 1-4, 12, and 13 are rejected under 35 USC §112, second paragraph as being indefinite. The Examiner asserts that these claims are rejected because they recite only functional language in the claims, and do not specifically set forth the composition. This rejection is traversed for the following reasons.

Applicants submit that the recitation of functional language does not by itself render the claims indefinite. In particular, in *In re Swinehart*, the court held that functional language does not, in and of itself, render a claim improper. *In Re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA, 1971).

Further in *re Barr*, 444 F.2d 588, 170 USPQ 33 (CCPA, 1971), the court held that functional language is perfectly acceptable if it sets forth definite boundaries on the patent protection sought.

Applicants contend that they have set forth definite boundaries on the patent protection they are seeking. The invention of the instant application is drawn to a carpet comprising a stainproof-treated textile with certain properties. The properties recited in claim 1 are properties that make the carpet well suited for this purpose, i.e., ease of cleanability.

This is in stark contrast to *Ex Parte Slob*, wherein the applicant had described the detergent composition as "a liquefiable substance having a liquefaction temperature from about 40°C to about 300°C and being compatible with the ingredients in the powdered detergent composition." Part of the reason why the Board found this indefinite was that it was too broad since it appeared to read upon materials that could not possibly be used to accomplish the purposes intended.

The composition of the present invention recites properties that make the composition useful for the purpose that it is to be used, i.e., as a carpet that has stainproof-treated textile. Accordingly, it is respectfully requested that the rejection of claim 1 and claims dependent therefrom under 35 USC §112, second paragraph be withdrawn.

The Examiner has rejected claim 1 and dependent claims 2-5, 10, 12, and 13 for the recitation of the formula: Stainproof ratio (%) =  $100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N$ . The formula has been amended to recite "Stainproof ratio (%) =  $100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N$ ". Withdrawal of the rejection is respectfully requested.

Claim 3 has been rejected for reciting the soil composition used to test the carpet. The Examiner asserts that this would be inherent in the test used. This rejection is traversed for the following reasons.

Claim 3 has been amended to convert the claim to a composition claim. It is believed that this has obviated the rejection. Withdrawal of the rejection is respectfully requested.

Claim 12 has also been rejected under 35 USC §112, second paragraph. These rejections are traversed for the following reasons.

Regarding Claim 12, the elements in claim 12 limit the stainproof treated carpet to carpets that are blue, wherein the L, a, and b are in the specific ranges described in it.

Applicants submit that one of skill in the art would know precisely what is meant by L, a, and b. Attached to this response, please find a copy of the AATCC Technical Manual/2001, pages 374-375 to show that those figures are used in the art and would be readily understandable to one of skill in the art (see Item 8, "Colorimetric Specification of the color Differences of the Gray Scale", the middle column to the right column, page 375).

It is believed that the above comments have obviated the rejections of claim 12 under 35 USC §112, second paragraph, so that the claim is no longer vague nor indefinite. Withdrawal of the rejection is respectfully requested.

#### **Rejections under 35 USC §103**

Claim 4 is rejected under 35 USC §103(a) as being unpatentable over JP '175 (JP 5910175 A) or Kato '003 (US Patent No. 5,349,003) in view of Pacifici '328 (US Patent No. 5,843,328). The Examiner asserts that JP '175 discloses a composition that imparts water and oil repellent properties to fibers comprising a fluoroalkyl-containing compound and a triazine ring-containing compound. The Examiner further asserts

that JP '175 discloses this composition can be applied to carpets. The Examiner asserts that Kato '003 discloses an aqueous dispersion that comprises a fluorine-containing polymer and at least one resin selected from the group consisting of a water soluble resin and a water dispersible resin. The Examiner uses Pacifici '328 to disclose carpets that are finished with stainblockers and fluorocarbon soil repellants.

Claim 5 is rejected under 35 USC §103(a) as being unpatentable over JP '175 in view of Pacifici '328 and further in view of Kubo '175 (US Patent No. 5,883,175).

Claims 4 and 10 are rejected under 35 USC §103(a) as being unpatentable over Amimoto '991 (US Patent No. 5,143,991) in view of Kato '003, and Pacifici '328.

These rejections are traversed for the following reasons.

#### Instant Invention

The present invention discloses a carpet comprising a stainproof-treated textile, wherein the carpet has a stainproof ratio (%) of at least 30 %. The stainproof ratio is expressed by the following formula:

$$\text{Stainproof ratio (\%)} = 100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N$$

wherein  $\Delta E_N$  is the color difference after a stainproof test of untreated carpet,  $\Delta E_{Tn}$  is the color difference after a stainproof

test of carpet treated by the stainproof agent, and n is a number of cleaning wherein cleaning is conducted according to AATCC-138.

Generally, stainproofing properties come from fluorine. Accordingly, the less fluorine there is in a composition, the lower would be the stainproofing properties. However, one sees an increase in the durability of the stainproofing agent composition with lower fluorine levels.

It would be desirable to have both high durability and good stainproofing properties because people walk in shoes on carpets, and carpets become dirty. The instant invention has excellent stainproofing properties and cleaning durability, which is shown in the Examples, wherein the carpets still show more than 30% of stainproof ratio even after cleaning the carpets five times.

The Examiner's attention is drawn to a comparison of Comparative Examples 2 and 3 in Tables 5 and 6 of the present specification (page 22), wherein it can be seen that a crosslinking agent in a stainproofing agent composition lowers stainproofing properties of a carpet. It is noted that the ELASTRON BN-69 that is present in Comparative Example 3 is blocked isocyanate.



Disclosure of JP '175

JP '175 discloses a urea or urethane compound with at least two ethylene imine groups that are essential. The fiber made in JP '175 includes yarns, woven, knitted and non-woven fabrics, which are used for ski pants, a windbreaker, golf wear, etc. JP '175 does not disclose that the fiber of JP '175 is applicable to a carpet.

Further, JP '175 discloses in lines 8-10 of the upper column of page 3 that triazine ring-containing compounds have an effect of improving a stitch staggering-resistance. It further says that this stitch is required as a product characteristic.

Disclosure of Kato '003

Kato '033 discloses an aqueous fluorine-containing polymer dispersion having particle diameters of 0.05-3  $\mu\text{m}$ . These fluorine-containing polymer dispersions are obtainable by emulsion-polymerizing 5-95 parts by weight of a monomer mixture. The monomer mixture consists of at least one monomer selected from the group consisting of alkyl acrylates whose alkyl groups have 1-18 carbon atoms and alkyl methacrylates whose alkyl groups have 1-18 carbon atoms and optionally an ethylenically unsaturated compound copolymerizable with the alkyl acrylates and the alkyl methacrylates. These compounds are present in an

aqueous medium in the presence of 100 parts by weight of particles of a vinylidene fluoride polymer and an aqueous dispersion containing a fluorine-containing polymer which is present in an amount that is 95-30 parts by weight (in terms of solids content) of said aqueous fluorine-containing polymer dispersion and 5-70 parts by weight (in terms of solids content) of an aqueous dispersion of a water-soluble resin and/or a water-dispersible resin. These aqueous dispersions can be used as a coating composition for fiber-treating compounds, a paper-processing compound, or a floor-coating compound.

#### Disclosure of Pacifici '328

Pacifici '328 discloses a protective finishing composition as well as methods of manufacturing such compositions for finishing carpet products. The composition has a stainblocker and fluorocarbon-based repellent which can be made in a one-step process. This process includes first adding a naphthalene sulfonated salt to either a stainblocker or a fluorocarbon-based repellent and then adding the combination to the chemical not originally mixed with the naphthalene sulfonated salt.

#### Disclosure of Kubo '175

Kubo '175 discloses a stainproofing composition having water and oil-repellency, containing a polymer emulsion prepared

by dissolving at least one polyfluoroalkyl group-containing compound selected from the group consisting of a polyfluoroalkyl group-containing (meth)acrylate polymer, a polyfluoroalkyl group-containing polyester, a polyfluoroalkyl group-containing maleate and a polyfluoroalkyl group-containing fumarate in at least one monomer selected from the group consisting of a (meth)acrylate ester, a vinyl ester, a styrene compound and vinylidene chloride, vinyl chloride. Then, the resultant solution is emulsified in water to prepare an oil-in-water emulsion, then polymerized. The resulting emulsion exhibits water- and oil-repellency and stainproof properties.

#### Disclosure of Amimoto '991

Amimoto '991 discloses a copolymer comprising (a) an acrylate or methacrylate having a fluoroalkyl group, (b) a polyalkylene glycol acrylate or methacrylate, (c) an acrylate or methacrylate having a hydroxyl group, and (d) at least one compound selected from the group consisting of alkyl acrylates, alkyl methacrylates and butadiene. The resulting copolymer imparts water and oil repellency and soil-releasability to fabrics.

Removal of JP '175 or Kato '003 in view of Pacifici '328

JP '175 discloses a urea or urethane compound with at least two ethylene imine groups that are essential. Imine groups are not a part of the present invention. The fiber made in JP '175 includes yarns, woven, knitted and non-woven fabrics, which are used for ski pants, a windbreaker, golf wear, etc. No mention is made in JP '175 of carpeting.

Comparative Examples 3 and 6 described in JP '175 are the closest compositions to the present invention, and these examples show that the water-strikethrough preventive effects are lowered. This lowering of the water-strikethrough preventive effect is not a desirable feature for a carpet.

Finally, JP '175 discloses in lines 8-10 of the upper column of page 3 that triazine ring-containing compounds have the effect of improving stitch staggering-resistance, and this stitch staggering-resistance is a required product characteristic. The stitch staggering, which occurs in the fiber of JP '175, does not occur in carpet. Accordingly, the disclosure of JP '175 appears to teach away from using a triazine ring in a composition that is for carpeting. In other words, from the teaching of JP '175 one of ordinary skill in the art would not be motivated to add a triazine ring-containing compound to a stainproofing composition.

Kato '003 discloses an aqueous dispersion, but does not show how to manufacture a carpet using this dispersion.

The present invention provides a carpet with stainproofing properties, which can retain the stainproofing properties after cleaning repeatedly. In contrast, Kato fails to disclose or suggest such properties. Kato '003 discloses a "carpet-backing compound," but does not disclose an application to a carpet itself.

Pacifici '328 discloses in column 1, lines 16-17 that the primary carpet finishing process was the application of fluorocarbon polymer emulsions, which imparted water and oil repellency. However, with this disclosure one would not arrive easily at the present invention.

This is because (i) the present invention provides a stainproofing agent composition, which gives a carpet not only water and oil repellency, but also stainproofing properties. Pacifici '328 uses a commercially available fluorocarbon emulsion in the specific examples and does not disclose the fluoroalkyl-containing compounds according to the present invention.

Applicants submit that JP '175 in view of Pacifici '328 or Kato '003 in view of Pacifici '328 fail to disclose the instantly rejected claim. Neither JP '175 nor Kato '003 disclose a carpet that is treated with a stainproofing composition. JP '175 and

Kato '003 mention nothing of stainproofing and give no indication that their disclosed compositions could be used for stainproofing. Kato '003 indicates that the composition of Kato '003 is useful for heat resistance and weather resistance. The deficiency of these references is not made up by Pacifici '328. Pacifici '328 does not disclose or suggest the instant composition. In particular, Pacifici '328 fails to mention any triazines. Thus, because the composition is not taught, there is no disclosure or suggestion in Pacifici '328 that the instantly claimed composition would be useful for stainproofing. Accordingly, Kato '003 in view of Pacifici '328 or JP '175 in view of Pacifici '328 can not render obvious the instant invention because they do not teach the elements of the instantly rejected claim. Withdrawal of these rejections are warranted and respectfully requested.

Removal of JP '175 in view of Pacifici '328 and Kubo '175

Kubo '175 discloses a fluorine-containing stainproofing composition having a microphase separation structure in particles. Kubo '175 does not disclose or suggest the composition of the instant invention. A polyfluoroalkyl group - containing maleate represented by the general formula (3) shown by Kubo '175 is similar to a compound shown in the middle of the page 19 of the present specification. However, there is no

indication that this compound (3) is more preferable than the other shown compounds.

Further, Kubo '175 does not mention triazine ring-containing compounds at all. Pacifici '328 also fails to mention any triazines. Thus, because neither reference teaches the composition of the instant invention, there is no disclosure or suggestion in Kubo '175 or Pacifici '328 that the instantly claimed composition would be useful for stainproofing.

JP '175 does not disclose a carpet that is treated with a stainproofing composition. JP '175 mentions nothing of stainproofing and gives no indication that its disclosed compositions could be used for stainproofing.

JP '175 in view of Pacifici '328 and Kubo '175 can not render obvious the instant invention because there is no indication in any of the references that the composition on the instantly claimed carpet could be used for stainproofing. Accordingly, the rejection can not stand. Withdrawal of the rejection is warranted and respectfully requested.

Removal of Amimoto '991 in view of Kato '003 and Pacifici '328

Amimoto '991 discloses a copolymer which can provide a desoiling agent having good initial soil-releasability and also improved durability of desoiling ability, comprising:

- (a) an acrylate or methacrylate ester having a fluoroalkyl group,
- (b) a polyalkylene glycol or methacrylate,
- (c) an acrylate or methacrylate ester having a hydroxyl group and
- (d) at least one compound selected from the group consisting of alkyl

acrylates, alkyl methacrylates and butadiene, wherein the compounds (a), (b), (c) and (d) may be solution polymerized in an organic solvent in the presence of a polymerization initiating source.

Compounds (b) and (c) are common ingredients between Amimoto '991 and the proposed Claim 10 of the present invention. However, Amimoto '991 fails to mention any triazine ring-containing compounds. Thus, Amimoto '991 fails to disclose the instant composition.

Pacifici '328 also does not disclose or suggest the instant composition. Pacifici '328 also fails to mention any triazines.

Further, the copolymer of Amimoto '991 is used as a de-soiling agent for fabrics, not for carpets, which can be gathered from column 1, lines 16-25. A de-soiling agent for fabrics is often not suitable for carpets. This is because their characteristics in their compositions are often different due to objective differences (e.g., in cleaning). In



particular, the coating on a carpet should be more stainproofing, water-repellent, and oil-repellent than that on fabrics. This is because people walk in shoes on a carpet (and thus carpets usually get dirtier than fabrics) and a carpet is not washed as often as fabrics. Accordingly, the coating on fabrics should have more cleaning durability than that on a carpet.

Kato '003 does not disclose a carpet that is treated with a stainproofing composition. Kato '003 mentions nothing of stainproofing and gives no indication that its disclosed composition could be used for stainproofing. Kato '003 further indicates that the composition of Kato '003 is useful for heat resistance and weather resistance. Accordingly, the combination Amimoto '991 in view of Kato '003 and Pacifici '328 would not arrive at the instantly claimed rejection because there is no indication in any of the references that the composition on the instantly claimed carpet could be used for stainproofing. Thus, the rejection is inapposite. Withdrawal of the rejection is respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such that a passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

If any questions remain regarding the above matters, please contact Applicant's representative, Andrew D. Meikle, in the Washington metropolitan area at the phone number listed below.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two (2) month extension of time for filing a reply in connection with the present application, and the required fee of \$400.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  #28977  
for Andrew D. Meikle, #32,868

ADM/TBS/crt

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

Attachments



The paragraph starting on page 6, line 1 has been amended as follows:

$$\begin{array}{c} \text{O} \qquad \qquad \text{O} \qquad \qquad \text{O} \\ \parallel \qquad \qquad \parallel \qquad \qquad \parallel \\ \text{RfCH}_2\text{CH}_2\text{O}-\text{CNHCH}_2(\text{CH}_2)_4\text{CH}_2-\text{N}-\text{C}-\text{N}-\text{C}-\text{OCH}_2\text{CH}_2\text{Rf} \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{H} \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \parallel \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{O}=\text{C} \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \parallel \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{HN}-\text{CH}_2(\text{CH}_2)_4\text{CH}_2\text{NHCOOCH}_2\text{CH}_2\text{R} \end{array}$$

The paragraph starting on page 14, line 9 has been amended as follows:

$\Delta E_{Tn}$ : Color difference after stainproof test of carpet treated by the stainproof agent

n: the number of cleaning.--

The paragraph starting on page 15, line 21 has been amended as follows:

--Cleaning of the carpet textile treated with a stainproofing agent is conducted according to [AARCC-138] AATCC-138.--

### **Abstract**

The Abstract has been amended as follows:

--The invention relates to a carpet comprising a stainproof-treated textile, wherein the carpet has stainproof ratio (%) of at least 30 % as defined below:

$$\text{Stainproof ratio (\%)} = 100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N$$

$$[\text{Stainproof ratio (\%)} = 100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N]$$

$\Delta E_N$ : Color difference after stainproof test of untreated carpet;

$\Delta E_{Tn}$ : Color difference after stainproof test of carpet treated by the stainproof agent;

n: the number of cleaning; cleaning is conducted according to

AATCC-138,  $n \leq 20$ .--

**IN THE CLAIMS:**

The claims have been amended as follows:

Claim 1. (Amended) A carpet comprising a stainproof-treated textile, wherein the carpet has stainproof ratio defined below of at least 30 %:

$$\text{Stainproof ratio (\%)} = 100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N$$

$$[\text{Stainproof ratio (\%)} = 100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N]$$

$\Delta E_N$ : Color difference after stainproof test of untreated carpet;

$\Delta E_{Tn}$ : Color difference after stainproof test of carpet treated by the stainproof agent;

n: the number of cleaning; cleaning is conducted according to AATCC-138,  $n \leq 20$  [)].

Claim 3. (Amended) [The carpet according to claim 1 wherein  
a] A dry soil composition used in a stainproof test according to AATCC-123, [is] shown in the following table:

<u>Composition</u>	<u>Content (% by weight)</u>
Peat moss	38.4
Cement	18
Kaoline	18
Silica	18
Carbon black	1.15

Iron oxide	0.3
<u>Nujol</u>	<u>6.25.</u>

Claim 6. (Amended) A stainproofing agent composition for carpet comprising:

- (1) a fluorine-cont<sub>r</sub>aining stainproofing agent comprising a fluoroalkyl-containing compound; and
- (2) a triazine ring-containing crosslinking agent.

Claim 9. (Amended) The stainproofing agent composition for carpet according to claim[s] 6 which further comprises at least one selected from the group consisting of PEG and a copolymer comprising:

- (1) at least one monomer selected from the group consisting of acrylate and methacrylate which have a polyoxyethylene chain; and
- (2) at least one reactive monomer selected from the group consist<sub>o</sub>ing of glycerol methacrylate and glycidyl methacrylate.

Claim 10. (Amended) The carpet according to claim 1 treated with the stainproofing agent composition, which comprises:

(1) a fluorine-containing stainproofing agent [composition according to claim 9] comprising a fluoroalkyl-containing compound and

(2) a triazine ring-containing crosslinking agent,  
and may further comprise at least one selected from the  
group

consisting of PEG and a copolymer comprising:

(3) at least one monomer selected from the group consisting of  
acrylate and methacrylate which have a polyoxyethylene chain and

(4) at least one reactive monomer selected from the group  
consisting of glycerol methacrylate and glycidyl methacrylate.

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Abstract

The invention relates to a carpet comprising a stainproof-treated textile, wherein the carpet has stainproof ratio (%) of at least 30 % as defined below:

$$\text{Stainproof ratio (\%)} = 100 \times (\Delta E_N - \Delta E_{Tn}) / \Delta E_N$$

*A4*  $\Delta E_N$ : Color difference after stainproof test of untreated carpet;

$\Delta E_{Tn}$ : Color difference after stainproof test of carpet treated by the stainproof agent;

n: the number of cleaning; cleaning is conducted according to

AATCC-138,  $n \leq 20$ .

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